

Atty Docket No.: TKHR1020

Serial No.: 09/768,483

**In The Claims:**

1. (currently amended) An optical function module for bi-directional wavelength-division multiplexer (WDM) optical communication system, comprising:

at least one wavelength managing module having a plurality of ports, the wavelength managing module optically coupling between a first optical transceiver and a second optical transceiver, wherein the first and the second optical transceivers provide a first and a second optical channels respectively for transmitting a plurality of optical signals with different wavelengths; and

at least one uni-directional optical function module having a high isolation function from an optical isolator, and coupling to the ports of the wavelength managing module.

2. (currently amended) The optical function module of claim 1, wherein the uni-directional optical function module having [a] the high isolation function is an optical amplifier module with the optical isolator, and couples to the ports of the wavelength managing module.

3. (withdrawn) The optical function module of claim 1, wherein the uni-directional optical function module having a high isolation function is a chromatic dispersion compensator coupling to the ports of the wavelength managing module.

4. (withdrawn) The optical function module of claim 3, wherein the chromatic dispersion compensator further comprises an optical circulator and an optical fiber grating.

Atty Docket No.: TKHR1020

Serial No.: 09/768,483

5. (withdrawn) The optical function module of claim 4, wherein the optical circulator of the optical dispersion compensator is a three-port circulator.

6. (withdrawn) The optical function module of claim 4, wherein the optical circulator of the optical dispersion compensator is a six-port circulator.

7. (original) The optical function module of claim 1, wherein the wavelength managing module is a multi-window wavelength-division multiplexer (MWDM).

8. (withdrawn) An optical function module for bi-directional wavelength-division multiplexer (WDM) optical communication system, comprising:

at least one wavelength managing module having a plurality of ports, the wavelength managing module optically coupling between a first optical transceiver and a second optical transceiver, wherein the first and the second optical transceivers provides a first and a second optical channels respectively for transmitting a plurality of optical signals with different wavelengths;

at least one uni-directional optical function module coupling to the ports of the wavelength managing module; and

at least one optical isolator optically coupled between the wavelength managing module and the uni-directional optical function module.

**Atty Docket No.: TKHR1020****Serial No.: 09/768,483**

9. (withdrawn) The optical function module for bi-directional wavelength-division multiplexer (WDM) optical communication system of claim 8, wherein the uni-directional optical function module comprises at least one optical add/drop module coupling to the ports of the wavelength managing module.

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10. (withdrawn) The optical function module for bi-directional wavelength-division multiplexer (WDM) optical communication system of claim 8, wherein the uni-directional optical function module comprises at least one uni-directional optical crossconnect coupling to the ports of the wavelength managing module.

11. (withdrawn) The optical function module for bi-directional wavelength-division multiplexer (WDM) optical communication system of claim 8, wherein the wavelength managing module comprises a multi-window wave-division multiplexer (MWDM).

12. (withdrawn) A bi-directional wavelength multiplexer optical communication system, for automatically switching optical signals, comprising:

a plurality of wavelength managing modules, each of the wavelength managing modules having a plurality of ports, and one of the ports connecting to a first optical transceiver and another port connecting to a second optical transceiver, the first and the second optical transceivers respectively providing a first and a second optical channels for transmitting a plurality of optical signals with different wavelengths;

at least one uni-directional wavelength crossconnect optically connecting between the ports

**Atty Docket No.: TKHR1020****Serial No.: 09/768,483**

of the wavelength managing modules; and

a plurality of optical isolators, each of the optical isolators optically connecting between the uni-directional optical crossconnect and each of the wavelength managing modules.

13. (withdrawn) The bi-directional wavelength multiplexer optical communication system of claim 12, wherein each of the wavelength managing modules comprises at least one multi-window wave-division multiplexer (MWDM).

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14. (withdrawn) The bi-directional wavelength multiplexer optical communication system of claim 12, wherein the number of the wavelength managing modules is consistent with the number of input optical transmission paths of the bi-directional wavelength multiplexer optical communication system.

15. (withdrawn) The bi-directional wavelength multiplexer optical communication system of claim 12, wherein the number of the optical isolators is consistent with the number of input optical transmission paths of the bi-directional wavelength multiplexer optical communication system.